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ABSTRACT

Volume 8 of the 19-volume Highway Safety Program Manual (which provides guidance to State and local governments on preferred highway safety practices) concentrates on alcohol in relation to highway safety. The purpose and objectives of the alcohol program are outlined. Federal authority in the area of highway safety and general policies regarding the alcohol program are described. Program development and operations (planning, chemical and behavioral tests, qualifications of personnel, tests following fatal crashes, and implied consent) are presented. Criteria and procedures for program evaluation are described. Procedures for filing operational, management information, evaluation, and National Highway Traffic Safety Administration reports are outlined. Local government participation is briefly described. Appendixes contain the Highway Safety Program Standard Eight, Alcohol in Relation to Highway Safety; a glossary of definitions; references; a list of representative projects; a list of resource organizations; an alcoholic influence report form; minimum educational and experience requirements for a laboratory director and laboratory analyst; standard report for alcoholic involvement in fatal accidents; pertinent sections of the Uniform Vehicle Code; and a summary of the 1968 Alcohol and Highway Safety Report. (NH)

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Highway Safety NO. 8
Program Manual

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Alcohol In Relation To Highway Safety

MARCH 1975

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

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HIGHWAY SAFETY PROGRAM MANUAL

VOLUME 8

ALCOHOL IN RELATION TO HIGHWAY SAFETY

This manual is designed as a guide for States and their political subdivisions to use in developing highway safety program policies and procedures. It does not supersede the requirements of Highway Safety Program Standard No. 8.

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FOREWORD

As part of the Highway Safety Program Manual, this volume is designed to provide guidance to State and local governments on preferred highway safety practices. Volumes comprising the Manual are:

0. Planning and Administration
1. Periodic Motor Vehicle Inspection
2. Motor Vehicle Registration
3. Motorcycle Safety
4. Driver Education
5. Driver Licensing
6. Codes and Laws
7. Traffic Courts
8. Alcohol in Relation to Highway Safety
9. Identification and Surveillance of Accident Locations
10. Traffic Records
11. Emergency Medical Services
12. Highway Design, Construction, and Maintenance
13. Traffic Control Devices
14. Pedestrian Safety
15. Police Traffic Services
16. Debris Hazard Control and Cleanup
17. Pupil Transportation Safety
18. Accident Investigation and Reporting

The volumes of the Manual supplement the Highway Safety Program Standards and present additional information to assist State and local agencies in implementing their highway safety programs.

The content of the volumes is based on the best knowledge currently available. As research and operating experience provide new insights and information, the Manual will be updated.

The volumes of the Highway Safety Program Manual deal with preferred highway safety practice and in no way commit the Department of Transportation to funding any particular program or project.

Many expert organizations and individuals at all levels of government and in the private sector contributed heavily in the preparation of the volumes of the Manual. The Department appreciates greatly this help in furthering the national program for improving highway safety for all Americans.

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

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I. INTRODUCTION

The driver and pedestrian who drink immoderately constitute one of the major problems affecting highway safety. Though constituting only a small percentage of drivers and pedestrians, whether they have been drinking or not, such alcohol abusers account for some 25,000 highway deaths each year and for smaller, but very important, proportions of the far more numerous non-fatal crashes. Especially tragic also is the fact that many of those killed and injured are the innocent victims of such abusive drinkers. This situation, which led to the issuance of the Standard on Alcohol in Relation to Highway Safety, was well recognized by the Congress. As the Committee on Public Works stated in its report to Congress:

> "Every witness who testified before the committee expressed deep and growing concern regarding the incidence of impairment by alcohol in relation to highway accidents. Though it is, on the basis of present information, impossible to state how many accidents were in fact the result, or even in part the result, of the driver's or the pedestrian's consumption of alcohol, the statistics do indicate clearly that alcohol is a factor present to some degree in about 50 percent of all accidents. This is a serious problem, and a perplexing one. Its alleviation and control will be extremely difficult, but its magnitude precludes its evasion."*/**

*H. Rept. 1700, 89th Congress, 2d Session, p. 26.
**All of those concerned with this field should consult the 1968 Alcohol and Highway Safety Report, the summary of which is given in Appendix J (see Appendix C for full citation).

II. PURPOSE

The basic purposes of the Highway Safety Program, Alcohol in Relation to Highway Safety, are:

A. To ensure that States and their communities have accurate information on the extent to which the immoderate use of alcohol is a factor in the highway crashes in their jurisdictions, to serve as the basis both for resource allocations and for determining the effects of countermeasures.

B. To broaden the scope and number of Statewide activities directed toward reducing highway crashes arising in whole or part from persons driving under the influence of alcohol.

III. SPECIFIC OBJECTIVES

Specific objectives of the program are:

A. To have legislation* which specifies:

1. Chemical test procedures for determining the alcohol concentrations in suitable specimens of body origin.

2. That an alcohol concentration in drivers equal to or exceeding a specific minimum, such minimum not to exceed 0.10 percent by weight/volume,** is either illegal or is presumptive evidence of being "intoxicated" or "under the influence of alcohol."

B. To have "implied consent" legislation,* which provides that a person's operator's permit shall be revoked if he is arrested upon reasonable grounds for belief that he has committed related driving offenses and subsequently refuses, on request, to submit to a chemical blood-alcohol test.

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*Procedural safeguards which should be included in such legislation are given in Appendix I of this volume.

**% by W/V is obtained by dividing the weight of alcohol expressed in grams in a sample by the volume of the sample expressed in milliliters, and multiplying by 100. It is then equivalent to grams of alcohol per 100 ml of fluid analyzed.

C. To have quantitative tests:

1. On the bodies of all drivers and on all pedestrians 15 years of age or older who die within 4 hours after involvement in a crash.

2. To the maximum extent practicable, and consistent with legal rights, on all surviving drivers in:

   a. Crashes fatal to others.

   b. Other serious crashes.

D. To have procedures for specifying:

1. The qualifications of personnel who are involved with chemical tests used to determine the content of alcohol in blood, breath, and other materials of body origin.

2. The methods and related details of specimen identification, selection, collection, handling, and analysis.

3. The reporting and tabulation of the results.

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The Congress amended Title 23, United States Code, by adding a new chapter, Chapter 4 - Highway Safety, in September 1966. This amendment is known as the Highway Safety Act of 1966.

Section 402(a) of Title 23, U.S.C., authorizes and directs the Secretary (of Transportation) to increase highway safety by, among other things, establishing uniform Highway Safety Standards expressed in terms of performance criteria. Program Standard 8 is entitled, Alcohol in Relation to Highway Safety, and is presented in Appendix A.

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II. Policy

I. INTRODUCTION

The Department of Transportation expects each State to develop a workable program which is capable of achieving the central purpose of the Standard. The following policies are derived from the Standard.

II. POLICY

A. To establish a program concerning alcohol in relation to highway safety, each State should:

1. Develop a Statewide plan for implementing a program* responsive to the Standard.

2. Establish relationships between the State government and local jurisdictions to facilitate achievement of the basic program objectives.

3. Bring State, local government, and private resources to bear to ensure that police, courts, motor vehicle departments, and others concerned with alcohol in relation to highway safety, including, to the extent practicable, those with special expertise in relation to alcoholism,

*Program in this volume means the Statewide program concerning alcohol in relation to highway safety.

have direct, continuing, and intensive professional support in the handling, evaluation, disposition, and follow-up of persons charged with alcohol-related highway offenses.

4. Ensure that on-the-road police activities concerned with pedestrians and drivers under the influence of alcohol are aimed at the places and times of day and week where and when the problem is most serious.

5. Develop criteria of performance which are appropriate to the State and allow the State to evaluate its own program.

6. Provide for training and accreditation of personnel at all levels who engage in measuring alcohol in materials of body origin.

7. Devise and implement a program which effectively informs the public of the effects and dangers of using the highway either as drivers or as pedestrians while under the influence of alcohol.

8. Evaluate the program and report to the Department of Transportation and the local jurisdictions on the program status using both quantitative and qualitative data.

B. It is recognized by the Department of Transportation that each State will develop a program which reflects the unique political, economic, social, and geographic characteristics of the State. The Department encourages diversity suitable to local conditions within the intent of national uniformity.

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VII. Implied Consent

I. INTRODUCTION

This chapter deals with the major elements which should constitute a Statewide program of alcohol in relation to highway safety.

II. PLANNING

The establishment, development, and operation of an effective program require careful and continuing planning. Such planning should include the following:

A. Definition of objectives.

The objectives should be derived from the Standard and this Manual, supplemented by State executive, legislative, and judicial policy and current information.

B. Determination of program scope and content.

This element should be based on the current and projected needs, evaluated in the context of the Standard and this Manual, in light of resources available for the support of the program.

C. Determination of legislative needs to implement the program.

A review of the current statutes should be made to ascertain what new legislation is needed.

D. Determination of manpower and organization necessary to administer the program.

The State agency selected to administer this program should be capable of providing effective management and administration.

E. Determination of necessary facilities and financial resources to support the program.

There should be a thorough assessment of existing facilities and financial resources and a determination of what new ones must be created.

III. CHEMICAL TESTS

This section deals with chemical tests* which can be used to measure alcohol in materials of body origin and to detect signs of alcoholic impairment.

A. Scientific and technical regulations.

An appropriately qualified State agency** such as the Health Department, Office of the Medical Examiner, or Department of Public Safety, should have overall scientific and technical control of chemical testing for alcohol throughout the State. The responsible State agency should have the following responsibilities:

1. Promulgate regulations concerning the collection, identification, custody, preservation, and storage of blood, breath, and other body materials obtained for analysis for alcohol content.***

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*Chemical tests include all scientific methods used for testing for alcohol concentration.

**The term "responsible State agency" will hereinafter be used to refer to the agency described in this paragraph.

***Procedures should include evidentiary safeguards relating to identification and chain of custody of such materials.

a. The regulations should limit the analyses to specimens of blood, breath, or urine in the case of living subjects.

b. Choice of postmortem specimens from subjects of autopsies should be at the discretion of the responsible physician; specimens of blood should be drawn from areas not likely to be contaminated with alcohol from the gastrointestinal tract or by diffusion therefrom.

2. Select or develop, and implement a suitable program for periodic performance evaluation of laboratories, agencies, and individuals performing chemical tests for alcohol. Performance reports should be prepared and maintained as public records.

3. Provide information and advice relevant to testing for alcohol to law enforcement agencies and other interested parties through the State traffic records system.

4. Provide for appropriate training in the performance of alcohol analyses and for accreditation of qualified individuals meeting the performance requirements established.

B. Analysis of blood.

Reliability criteria, including accuracy, precision, and specificity of the methods of analysis and preservation of the specimens, must be established by the responsible State agency.

1. Procedures for blood analysis should include the following controls in conjunction with each batch of samples analyzed:

a. A system blank analysis.

b. Analysis of a suitable reference or control blood sample of known alcohol content within the range 0.10 to 0.30% W/V; the result of which analysis must coincide with the known blood alcohol value of the reference specimen within ± 0.01% W/V if validity is to be assigned to the results for the batch analyzed.

2. Replicate analyses are recommended in order to minimize the possibility of undetected errors.

3. Results should be expressed in terms of % W/V, that is, grams of alcohol per 100 milliliters of blood, rounded downward, to the second decimal place; for example, 0.237% found should be reported as 0.23%.

4. Analytical procedure for determining alcohol in blood should meet the following performance requirements:

   a. The accuracy and sensitivity of the procedure should be such as consistently to attain results within ± 0.01% W/V of the known value over the range of 0 to 0.30% W/V in analyses of appropriate reference materials of known ethyl alcohol concentration.

   b. The precision of the procedure should be such as consistently to attain a standard deviation not greater than 0.003% W/V in replicate analyses.

   c. The blank values yielded by the procedure in analyses of alcohol-free blood specimens consistently should be not greater than 0.01% W/V.

   d. The specificity of the procedure should be adequate and appropriate for the analysis of biological specimens for the determination of the blood alcohol concentration in traffic law enforcement and highway crash investigations.

      (1) Procedures for the analysis of biological specimens from living subjects should respond only to ethyl alcohol and the other lower aliphatic alcohols and should not be susceptible to significant unrecognized interference by other substances.

      (2) Procedures for the analysis of postmortem biological specimens should respond only to ethyl alcohol and should not be susceptible to significant unrecognized interference by other substances.

C. Analysis of breath.

The chemical test of breath should be performed with the equipment and techniques which meet the reliability criteria, including accuracy, precision, and specificity established by the responsible State agency.

1. Breath specimens collected for analysis should be substantially in equilibrium, with respect to alcohol, with pulmonary arterial blood, i.e., should be essentially alveolar in composition.

2. Procedures for breath alcohol analysis for the indirect determination of the blood alcohol concentration should include the following controls in conjunction with the testing of each subject:

   a. Continuous observation of the subject for at least fifteen (15) minutes prior to collection of the breath specimen, during which period the subject must not have ingested alcohol, regurgitated, or vomited.

   b. A system blank analysis.

   c. Analysis of a suitable reference or control sample of known alcohol concentration, such as air equilibrated with a reference solution of known alcohol content at known temperature, the result of which analysis must coincide with the predicted blood alcohol value of the reference sample within ± 0.01% W/V.

3. Results of analyses of breath for alcohol should be expressed in terms of % W/V, that is, grams of alcohol per 100 milliliters of blood, to the second decimal place as found; for example, 0.237% found should be reported as 0.23%.

4. The quantity of breath analyzed for its alcohol content should be established only by direct volumetric measurement, or by collection and analysis of a fixed breath volume at constant known temperature.

D. Analysis of urine.

Reliability criteria, including accuracy, precision, and specificity of the methods of analysis and preservation of the specimens must be acceptable to the responsible State agency. Because of various problems in the interpretation of the results of analysis of urine for alcohol which cannot be readily overcome in law enforcement practice, urine analysis to determine equivalent alcohol concentration in blood is

discouraged, except under strictly controlled conditions (e.g., hospitalized subject), or for the limited purpose of demonstrating recent ingestion of alcohol. Chemical tests of blood or breath are preferred.

E. Specimen collection and preservation.

Every specimen should be collected in such a manner and with such precautions as to maintain the original identity, integrity, and composition with respect to alcohol.

1. All liquid biological specimens not analyzed immediately upon collection should promptly be so treated and preserved as to maintain the original identity, integrity, and composition with respect to alcohol of each specimen without significant alteration for a minimum period of 30 days, when kept at normal room temperature.

2. Solid tissue should be deep-frozen.

F. Public record.

The results and full procedural details of all chemical testing for alcohol should be matters of public record.

IV. BEHAVIORAL TESTS

Observations for impairment should be made on all drivers involved in crashes investigated by the police. To the extent practicable, behavioral tests should be made on a person where there is reasonable grounds to believe that he was driving while impaired and on all drivers who are arrested on any charge of driving while under the influence of alcohol.

A. Performance tests include but are not limited to the following:

1. Balance.

2. Walking.

3. Turning.

4. Finger-to-nose.

5. Fetching coins.

B. Observation of the suspect should include appearance, odor of breath, clarity of speech, general attitude, and other actions or unusual conditions.

1. The manual entitled, Driving Under the Influence of Alcohol or Drugs,* is recommended for training in recognizing "under-the-influence" offenses and as a guide for enforcement action.

2. The alcoholic influence report form** developed by the National Safety Council should be the minimum guide used in examining, interpreting, and recording the results of such tests.

C. The use of photographs, motion pictures, video tapes, and sound recordings to document behavior is strongly encouraged.

V. TECHNICAL QUALIFICATIONS OF OPERATIVE PERSONNEL

This section deals with the technical qualifications of personnel involved in chemical testing for alcohol.

A. Scientific direction.

A scientific director should be in overall charge of each program of chemical testing for alcohol. The director should have at least a master's degree in one of the natural sciences or other appropriate field and should have specialized knowledge of chemical tests for alcohol. It is recommended that the scientific director be affiliated with a local institution of higher learning so as to be informed of and engaged in research bearing on chemical testing, and to assure his own continuing education.

B. Qualifications and training of technical personnel.

To implement a sound chemical testing program properly trained and qualified individuals should be available in each State in adequate numbers.***

*Publication No. 2071, Traffic Institute, Northwestern University.
**See Appendix F.
***In States where adequate numbers of trained and qualified personnel are not available, the initial phase of implementing a chemical testing program should be the development of, or utilization of, training programs to provide the necessary personnel.

1. Blood, urine, and body material analysis.

   The qualifications and training of the laboratory director and laboratory analysts in any laboratory that carries out direct analysis of blood and body materials other than breath should meet the minimum educational and experience requirements for equivalent personnel set forth in the regulations for Conditions for Coverage of Services of Independent Laboratories Under the Federal Health Insurance for the Aged Act.*

2. Breath analysis.

   Chemical testing of breath should be supervised in each laboratory or agency engaged in breath alcohol analysis by a technical supervisor.

   a. The responsibilities of the technical supervisor should include:

      (1) Field inspection.

      (2) Maintenance and calibration of breath testing equipment.

      (3) Training and reevaluation of the breath test technicians under his jurisdiction.

      (4) Periodic reexamination of the operators under his jurisdiction to ensure maintenance of technical knowledge and competence.

   b. The minimum qualifications for a technical supervisor should be:

      (1) High school graduation or its equivalent.

      (2) Accreditation as an operator of the chemical breath analysis method he is to supervise, or possession of equivalent knowledge to qualify him as such.

*See Appendix G.

(3) Satisfactory completion of a technical supervisor's course, which should, minimally, include:

(a) Advanced survey of current information concerning alcohol and its effects on the human body.

(b) Operational principles and theories applicable to the program.

(c) Instrument maintenance and calibration.

(d) Legal aspects of chemical testing.

(e) Principles of instruction.

C. Technicians.

Each State should have enough trained technicians, operating under technical supervisors, to provide necessary Statewide coverage. The recommended course of instruction for these technicians includes at least the following:

1. A minimum of three (3) hours of instruction on the effects of alcohol on the human body.

2. A minimum of three (3) hours of instruction on operational principles of the selected testing method, which should include a functional description and a detailed operational description of the method with demonstration.

3. A minimum of five (5) hours of instruction on the legal aspects of chemical tests generally, and of the particular method to be employed.

4. A minimum of three (3) hours of instruction on supplemental information which should include nomenclature appropriate to the field of chemical tests for alcohol.

5. A minimum of ten (10) hours of laboratory participation using appropriate equipment. Laboratory practice should include the use of the reference standard, as well as the testing of drinking subjects.

6. A minimum of one (1) hour of formal examination for purposes of determining competency and qualification.

D. Accreditation of personnel.

Each State should establish formal criteria for accreditation and/or certification procedures for personnel authorized to supervise and conduct chemical tests for alcohol.

1. This process should be administered by the responsible State agency. The State may delegate accreditation authority to municipalities or counties but should retain supervisory control to ensure that uniform requirements are being met.

2. A specific time expiration limit, not to exceed two years, should be set for the accreditation or certification.

VI. TESTS FOLLOWING FATAL CRASHES

This section deals with the tests that should be performed in each State following fatal crashes:

A. State requirements.

For the purpose of continuous evaluation of the role that alcohol plays in fatal crashes, the allocation of program resources, and the determination of countermeasure efficacy, each State:

1. Should perform chemical tests on the bodies of at least 90 percent of the drivers and pedestrians over 15 years of age who die within four hours of the time of fatal crashes. Investigations should:

   a. Include chemical testing requiring both the availability and utilization of trained professional personnel and the use of sensitive equipment and procedures.

   b. Use only professionally trained coroners or medical examiners and accredited laboratories in implementing this program.

2. Is encouraged to provide that no person having custody of the body of such a deceased person shall perform any

internal embalming procedure until authorized to do so by the individual who has performed, or who will perform, the postmortem investigation.

3. Is encouraged to provide that analysis of the specimens obtained in such deaths be conducted by a procedure which is considered specific for ethyl alcohol and which therefore distinguishes among ethyl alcohol, isopropyl alcohol, methyl alcohol, formaldehyde, acetone, and other volatile reducing substances.

4. Should, to the extent practicable, conduct blood or breath tests on all surviving drivers in crashes fatal to others.

B. Test data.

The data collected in each State in relation to each such test should include at least the following:

1. Time and date of crash.

2. Time and date of death.

3. Role (driver or pedestrian) of each such fatally injured person.

4. Name, age, and address of each such fatally injured person.

5. Time and kind of each specimen taken.

6. Alcohol concentration of each specimen taken.

7. Method used to determine alcohol concentration.

8. Circumstances surrounding death, including such additional information as may be necessary to permit easy linkage to police, hospital, and other reports dealing with the same crash.

C. Summary data.

Each State should tabulate and publish at least annually, preferably monthly, data on the extent of alcohol involvement in fatal crashes. As a minimum these data should include the following:

1. Total number of fatal crashes.

2. Total number of fatalities, including all categories of persons.

3. Total number of drivers and pedestrians 15 years of age or older who died within four hours of the crashes in which they were injured.

4. Total number of such drivers and of such pedestrians tested.

5. The percentages of drivers and of pedestrians tested with blood alcohol concentrations in each of the following ranges:

   a. Negative or less than 0.01% W/V.

   b. 0.01 - 0.04% W/V.

   c. 0.05 - 0.09% W/V.

   d. 0.10 - 0.14% W/V.

   e. 0.15 - 0.24% W/V.

   f. 0.25% and over W/V.

D. Data form.

The data tabulation should be reported on the current version of the form developed by the National Safety Council entitled Standard Report of Alcohol Involvement in Fatal Motor Vehicle Traffic Accidents.*

E. Local jurisdictions.

In collecting the foregoing data, each State should obtain similar tabulations on a monthly basis from all local jurisdictions in the State.

*This form is presented as Appendix H.

VII. IMPLIED CONSENT

Each State should have "implied consent" legislation which provides that a person's operator's permit shall be revoked if he is arrested upon reasonable grounds for belief that he has committed an alcohol-related driving offense and subsequently refuses, on request, to submit to a chemical blood-alcohol test. States should establish an "implied consent" statute which conforms essentially to the appropriate sections of the Uniform Vehicle Code.*

*Appendix I of this volume reproduces sections of the Uniform Vehicle Code dealing with "implied consent."

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CHAPTER V. PROGRAM EVALUATION	March 1975

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II. Purpose of Evaluation
III. Criteria for Evaluation
IV. Techniques of Measurement
V. Evaluation Procedures

I. INTRODUCTION

A. Objective.

The final objective of any countermeasure program related to the Standard is reduction of the number of highway crashes in which alcohol is a factor. Therefore, long-term program evaluation must be directed to determining how fully this objective is achieved by measuring the reduction in alcohol-related highway crashes.

B. Problem.

The first problem is making such a determination is ensuring the availability of detailed data as to the extent of the alcohol-related highway safety problems in each local jurisdiction (in comparison with research findings indicating the problem nationally). Each State and local jurisdiction must have precise baseline and continuing information as to the magnitude of the problem in its own area and hence of the extent to which countermeasures are working. The following program is intended to assist in implementing the first phases of the long-term objective as well as to suggest certain immediate measurement techniques. They should serve as short-term measures of the effectiveness of the State program as recommended in the Standard and should serve as an indicator of the position of the State program with the Standard.

II. PURPOSE OF EVALUATION

Continuing evaluation of the alcohol program is necessary for ensuring that:

A. The program is achieving its objectives.

B. The resources available to the program are being used efficiently.

C. The intent of the Standard is being realized.

D. The persons responsible for the program are aware of its current status.

E. Effective short- and long-range planning can be performed.

III. CRITERIA FOR EVALUATION

The intent of the Department of Transportation is that each State vest responsibility for the operation of each program of chemical testing for alcohol in a scientific director. Initial and continuing evaluation is one of the most important functions that the scientific director assumes.

A. Testing and administration.

The following criteria may be used for an evaluation of both testing and administration.

1. Extent to which the State highway safety program conforms to the requirements of the Standard.

2. Extent to which the policies in Chapter III, paragraph 2a, specifically including 2a(3) and (4), are being achieved.

3. Availability of chemical tests throughout all local jurisdictions.

4. Stringency of accreditation requirements for supervisory and operating personnel and numbers of personnel meeting these requirements.

5. Performance, at the discretion of the scientific director, of laboratories in "blind" analysis of test specimens of blood, urine, and other materials.

6. Performance, at the discretion of the scientific director, of operators of breath-testing machines in "blind" analysis of test specimens of breath.

7. Stringency and frequency of routine maintenance and calibration procedures of breath-testing apparatus.

B. Tests following fatal and other serious crashes.

Evaluation of this program element may be performed by examining the Statewide program to determine if the following are in effect.

1. Postmortem investigations are conducted to measure the alcohol concentrations in the blood of every fatally injured driver and every fatally injured pedestrian over 15 years of age who die within four hours of a crash from injuries sustained in the crash.

2. No internal embalming procedures are performed by individuals having custody of such deceased persons until authorized to do so by the individual who has performed or will perform the postmortem investigation.

3. Analysis of the specimens obtained in such tests is considered specific for ethyl alcohol.

4. Chemical tests are performed on at least 90 percent of drivers and of pedestrians over 15 years of age who die within four hours of the crashes in which they are injured.

5. Data on the extent of alcohol involvement in fatal crashes are tabulated monthly for local jurisdictions and for the State.

C. Enforcement.

Evaluation of this program element requires:

1. Determining whether the Standard's "implied consent" legislative requirements have been met. An acceptable approach to this determination is comparison with the "implied consent" provisions of the Uniform Vehicle Code.

2. Accumulating data pertaining to the number of alcohol-related driving arrests. These data should cover the sequence of events beginning with arrests by police officers and terminating with final disposition of these cases by the judicial and/or administrative branches of the State and local governments. These data should be aggregated monthly by local jurisdictions and reported to the responsible State agency.

IV. TECHNIQUES OF MEASUREMENT

The extent and complexity of the methodological problems in determining the reduction of alcohol-related crashes are recognized. The further step of determining how much a particular countermeasure contributes to any subsequent reduction requires even more sophisticated measurement techniques.

A. Data requirements.

It is most important to give careful attention to:

1. The data collection and analysis plans prior to countermeasure implementation.

2. Perseverance on the part of operating personnel in accurately obtaining the needed data.

B. Operating evaluation.

The use of internalized measures, that is, those measures that only evaluate a program on the basis of its internal operations and administrative activity rather than measuring the program component's contribution to the overall objective, are discouraged. Where such measures are adopted as temporary expedients, each program administrator should strive to replace them with objective measures more closely related to the objective of the program: the reduction of death, injury, and property damage due to immoderate alcohol use by drivers and pedestrians.

C. Data processing.

A great deal of data collection and processing is inherent in many of the measures of evaluation. Program administrators

who are concerned with implementation and operation are urged to use modern data processing techniques as soon as possible and to the extent practicable to minimize problems in program analysis and report production.

V. EVALUATION PROCEDURES

An an initial effort and as a means of assessing the current status of the program of each State, a checklist of pertinent questions may be used. A suggested list of questions follows:

A. Does your State provide that:

1. It shall be unlawful for a person to operate a motor vehicle when his blood-alcohol concentration by weight is equal to or exceeds a specified concentration? Yes____. No____. If "yes," give the concentration____.

2. It shall be presumptive evidence of driving while under the influence of alcohol (or while intoxicated) if it is shown that the individual was operating with a blood-alcohol concentration by weight equal to or in excess of a specified concentration? Yes____. No____. If "yes," give the concentration____.

3. It shall be presumptive evidence of innocence of driving while under the influence of alcohol (or while intoxicated) if it is shown that an individual was operating with a blood-alcohol concentration by weight of less than a specified concentration? Yes____. No____. If "yes," give the concentration____.

4. There is a dual standard, under which charges may be made against drivers in two different concentration ranges, such as "driving while under the influence of alcohol" and "driving while ability to drive is impaired by alcohol"? Yes____. No____. If "yes," give the name of each and indicate the applicable blood-alcohol concentrations____.

B. Does your State have an "implied consent" law? Yes____. No____. If "yes," does it provide:

1. For revocation of a resident driver's license (or privilege to drive in the event he is unlicensed or a nonresident) upon his refusal to submit to a chemical test:

	YES	NO
a. Upon the request of an officer for any reason?	____	____
b. Only after having been placed under arrest for a traffic law violation?	____	____
c. Only after having been placed under arrest for any violation arising out of acts alleged to have been committed while "under the influence of alcohol"?	____	____
d. Only after having been placed under arrest for a "drinking driver" violation (driving while intoxicated, under the influence, or while impaired by alcohol)?	____	____

2. For a hearing, either automatically or upon request only? Yes____. No____. If "yes," indicate type:

   a. Automatic ____

   b. On request ____

3. For warning the defendant of the results of a refusal? Yes____. No____.

4. For the defendant to have a choice of tests? Yes____. No____.

C. Does your State have provision for quantitative tests for alcohol, to the extent practicable, on the following who die within four hours of a crash:

	YES	NO
1. Drivers killed in single-vehicle crashes?	____	____

	YES	NO
2. Drivers killed in multivehicle crashes?	___	___
3. Fatally injured pedestrians 15 years of age and older?	___	___
4. Surviving drivers in crashes fatal to others?	___	___

D. Does your State have a written manual on chemical testing? Yes____. No____.

1. Does the manual establish specific program details for personnel who administer chemical tests relating to:

	YES	NO
a. Qualifications?	___	___
b. Training?	___	___
c. Certification?	___	___

2. For field operations relating to:

	YES	NO
a. Alcohol specimen collection?		
b. Alcohol specimen preservation?	___	___
c. Alcohol specimen handling (chain of evidence)?	___	___
d. Alcohol specimen analysis?	___	___
e. Reporting of results?	___	___

3. Are all personnel and agencies involved in chemical testing required to follow the manual? Yes____. No____.

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CHAPTER	VI. REPORTS	March 1975

Par. I. Introduction
II. Operational Reports
III. Management Information Reports
IV. Evaluation Reports
V. Reports to National Highway Traffic Safety Administration

I. INTRODUCTION

Systematic reporting on the operations of the program is necessary for effective program management and communication with the National Highway Traffic Safety Administration.

II. OPERATIONAL REPORTS

The daily operations of the alcohol in relation to highway safety program require the preparation and submission of reports to the various agencies involved in this program. These reports should reflect the extent and progress of the program in the State. Agencies performing at least five different functions should be involved in this program. These are:

A. Law enforcement.*

B. Courts.

C. Driver licensing.

*Appendix F contains a copy of the Alcoholic Influence Report Form prepared by the National Safety Council. This form is recommended for use by arresting officers for recording data and other information.

D. Traffic records.

E. Responsible State agency for the program.

III. MANAGEMENT INFORMATION REPORTS

A. The officials responsible for this program need at least monthly performance reports to enable them to monitor and manage the Statewide program. The performance reports should consist of the following minimum data:

1. Total number of fatal crashes.

2. Total number of fatalities, including all categories of persons.

3. Total number of drivers and of pedestrians 15 years of age or older who died within four hours of the crashes in which they were injured.

4. Total number of drivers and of pedestrians tested.

5. Type of test(s) given.

6. The percentages of drivers and of pedestrians tested with blood-alcohol concentrations in each of the following concentration ranges:

   a. Negative to 0.01% W/V.

   b. 0.01 - 0.04% W/V.

   c. 0.05 - 0.09% W/V.

   d. 0.10 - 0.14% W/V.

   e. 0.15 - 0.24% W/V.

   f. 0.25% and over W/V.

7. Total number of citations issued for driving under the influence of alcohol.

8. Percentage of those arrested for driving while intoxicated or impaired, or for a related charge who were tested.

9. Change in number of convictions for driving under the influence of alcohol.

10. Number and change in number of drivers having license suspended, revoked, or restricted resulting from cases involving driving under the influence of alcohol.

B. Report form.

The tabulation of the data collected should be on the current version of the form developed by the National Safety Council entitled, Standard Report of Alcohol Involvement in Fatal Motor Vehicle Traffic Accidents.*

1. In collecting the foregoing data, each State should obtain similar tabulation on a monthly basis from local jurisdictions in the State and should coordinate the data with the State traffic records system.

2. Tabulation of information can serve as the basis for continuing program evaluation, planning, and resource allocation.

IV. EVALUATION REPORTS

Evaluation reports for this program should be prepared annually by the responsible State agency. These reports should condense the data outlined in paragraph III to indicate the effectiveness of the program in achieving its basic purpose, i.e., the reduction of highway crashes. The reports should compare the current year with previous years in terms of both the cost and benefit to the State of the program concerning alcohol in relation to highway safety and should outline future plans for the program.

V. REPORTS TO NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

The National Highway Traffic Safety Administration intends to request of each State certain reports, one of which is an annual report prepared by each State which provides an evaluation of the Statewide program.

*See Appendix H.

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

HIGHWAY SAFETY PROGRAM MANUAL

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Par. I. Introduction
II. Local Agencies with Program Responsibilities
III. Description of Activities

I. INTRODUCTION

Planning and administration of a Statewide program must involve the active participation of local governments since many program operations must be conducted at the local level.

II. LOCAL AGENCIES WITH PROGRAM RESPONSIBILITIES

The following local governmental elements should be involved to some extent in the Statewide program concerning alcohol in relation to highway safety.

A. Local chief executives.

B. Local law enforcement agencies.

C. Medical examiners or qualified coroners.

D. Health agencies.

III. DESCRIPTION OF ACTIVITIES

This section outlines the minimum necessary participation by local governmental agencies.

A. Chief executives of local jurisdictions.

The chief executives of local jurisdictions participating in this program should maintain and forward to the State statistics pertinent to program development and operations. The executives should be responsible for ensuring that all program elements under their jurisdiction are implemented and that appropriate data on the status of the program are available.

B. City and county police.

The effectiveness of the program is highly dependent on an active role on the part of the local police agencies in the State. The city and county police forces should be involved in this program in three significant ways:

1. Enforcement of "implied consent" and other laws relating to alcohol and highway safety.

2. Concentrating activities directed at the detection and apprehension of drivers and pedestrians under the influence of alcohol at the times of day, days of week, and places when and where the problem is most prevalent. (See: 1968 Alcohol and Highway Safety Report and Appendix J.)

3. Ensuring that their other responsibilities under the Statewide program, including the completion of appropriate reports, are carried out.

C. Medical examiners or qualified coroners.

The medical examiners and coroners of States that have such officials should be involved in this program by conducting or causing to be conducted chemical tests of persons fatally injured in motor vehicle crashes. Each of these local officials should have appropriate training in the techniques of extracting blood for analysis to determine its alcohol concentration.

D. Health agencies.

In conjunction with the appropriate State department, local health agencies should aid medical examiners, coroners, police, and courts in the operation of the program. Where appropriate, county laboratories that are adequately equipped

and staffed with trained persons could be used for analysis of samples taken in municipalities in the county or by other counties or regions under suitable intergovernmental arrangements.

Health agencies should work to ensure that police, courts, and others concerned with alcohol in relationship to highway safety have direct, continuing, and intensive professional assistance in the handling, evaluation, disposition, and follow-up of persons charged with alcohol-related highway offenses. The assistance and participation of nonofficial health and medical organizations and groups, including those with special expertise related to alcoholism, should be sought to the extent practicable. (See: 1968 Alcohol and Highway Safety Report and Appendix J.)

APPENDIX A

HIGHWAY SAFETY PROGRAM STANDARD 8

ALCOHOL IN RELATION TO HIGHWAY SAFETY

PURPOSE

To broaden the scope and number of activities directed toward reducing traffic accident loss experience arising in whole or part from persons driving under the influence of alcohol.

STANDARD

Each State, in cooperation with its political subdivisions, shall develop and implement a program to achieve a reduction in those traffic accidents arising in whole or in part from persons driving under the influence of alcohol. The program shall provide at least that:

I. There is a specification by the State of the following with respect to alcohol related offenses:

   A. Chemical test procedures for determining blood-alcohol concentrations.

   B. (1) The blood-alcohol concentrations, not higher than 0.10 percent by weight, which define the terms "intoxicated" or "under the influence of alcohol"; and

      (2) A provision making it either unlawful, or presumptive evidence of illegality, if the blood-alcohol concentration of a driver equals or exceeds the limit so established.

II. Any person placed under arrest for operating a motor vehicle while intoxicated or under the influence of alcohol is deemed to have given his consent to a chemical test of his blood, breath, or urine for the purpose of determining the alcohol content of his blood.

III. To the extent practicable, there are quantitative tests for alcohol:

   A. On the bodies of all drivers and adult pedestrians who die within 4 hours of a traffic accident.

B. On all surviving drivers in accidents fatal to others.

IV. There are appropriate procedures established by the State for specifying:

A. The qualifications of personnel who administer chemical tests used to determine blood, breath, and other body alcohol concentrations;

B. The methods and related details of specimen selection, collection, handling and analysis;

C. The reporting and tabulation of the results.

V. The program shall be periodically evaluated by the State, and the National Highway Safety Traffic Administration shall be provided with an evaluation summary.

APPENDIX B

GLOSSARY OF DEFINITIONS

This glossary defines those terms whose meanings may be unclear in the context in which they are used. These definitions are meant to apply only to the usage of these terms in this volume.

Alveolar - Refers to the smallest air sacs in the lungs, the air in which is in equilibrium with respect to alcohol with the immediately adjacent pulmonary arterial blood plasma.

Blood - Includes whole blood or the cellular components and the serum or plasma of blood.

Chemical Tests - Include the sum total of all manipulations required to achieve a result which shows the alcohol concentration of an individual's blood or other body substance.

Standard - Highway Safety Program Standard 8., Alcohol in Relation to Highway Safety, promulgated by the Department of Transportation.

APPENDIX C

REFERENCES

The literature on the many aspects of alcohol pertinent to this standard is extensive. The following lists references cited in the text and additional selected documents that are believed to be generally useful in the suggested program areas and for general background information.

General Information

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APPENDIX D

REPRESENTATIVE PROJECTS

The following five projects are being conducted by several States to implement the Program of Alcohol in Relation to Highway Safety.

1. Purchase of breath testing machines and training of police in their use (both on a Statewide and local basis).

2. Establishment of a centralized laboratory, which is manned by specialists, to make analyses of blood samples.

3. Purchase of video tape equipment to record usual evidences of action of drivers arrested for driving while under the influence of alcohol.

4. Supplying personnel to procure and process tests on blood of deceased drivers and pedestrians.

5. Establishment of record and information systems that will guarantee the production, tabulation, and rapid availability of the data described in this Manual.

APPENDIX E

RESOURCE ORGANIZATIONS

Organizations of national scope now active in program topics related to this standard are listed in this appendix; many of these have active chapters and units throughout the country.*

American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

Insurance Institute for Highway Safety
2600 Virginia Avenue, N. W.
Washington, D. C. 20037

National Center for Prevention and Control of Alcoholism
National Institute of Mental Health
5454 Wisconsin Avenue
Chevy Chase, Maryland 20203

National Highway Traffic Safety Administration
400 7th Street, S. W.
Washington, D. C. 20590

National Safety Council
Committee on Alcohol and Drugs
425 North Michigan Avenue
Chicago, Illinois 60611

*See Alcohol Problems: A Report to the Nation by the Cooperative Commission on the Study of Alcoholism, which contains a general description of organizations having a broad interest in alcohol-related problems and programs.

APPENDIX F

(Check) ☐ Driver ☐ Pedestrian ☐ Passenger

(Check) ☐ Accident ☐ Violation ☐ Other

Date and time of Accident or Violation _____ am/pm

ALCOHOLIC INFLUENCE REPORT FORM

Police Dept. _____

Arrest No. _____

Accident No. _____

Arresting Officer _____

Date and time in custody _____ am/pm

Name _____ Address _____

Age _____ Sex _____ Race _____ Approx. Wt. _____ Operator Lic. No. _____ State _____

OBSERVATIONS:

CLOTHES

Describe: (Type & Color)
Hat or Cap _____
Jacket or Coat _____
Skirt or Dress _____
Pants or Skirt _____

Condition: ☐ Disorderly ☐ Disarranged ☐ Soiled ☐ Mussed ☐ Orderly
(Describe) _____

BREATH — Odor of Alcoholic Beverage: ☐ strong ☐ moderate ☐ faint ☐ none

ATTITUDE — ☐ Excited ☐ Hilarious ☐ Talkative ☐ Carefree ☐ Sleepy ☐ Profanity ☐ Combative ☐ Indifferent ☐ Insulting ☐ Cocky ☐ Cooperative ☐ Polite

UNUSUAL ACTIONS — ☐ Hiccoughing ☐ Belching ☐ Vomiting ☐ Fighting ☐ Crying ☐ Laughing

SPEECH — ☐ Not Understandable ☐ Mumbled ☐ Slurred ☐ Mush Mouthed ☐ Confused ☐ Thick Tongued ☐ Stuttered ☐ Accent ☐ Fair ☐ Good

Indicate other unusual actions or statements, including when first observed: _____

Signs or complaint of illness or injury:

PERFORMANCE TESTS:

(Note—See departmental instructions for conducting these tests)

Check Squares If Not Made		Check appropriate square before word describing condition observed
☐	BALANCE	☐ Falling ☐ Needed Support ☐ Wobbling ☐ Swaying ☐ Unsure ☐ Sure
☐	WALKING	☐ Falling ☐ Staggering ☐ Stumbling ☐ Swaying ☐ Unsure ☐ Sure
☐	TURNING	☐ Falling ☐ Staggering ☐ Hesitant ☐ Swaying ☐ Unsure ☐ Sure
☐	FINGER-TO-NOSE	Right: ☐ Completely Missed ☐ Hesitant ☐ Sure Left: ☐ Completely Missed ☐ Hesitant ☐ Sure
☐	COINS	☐ Unable ☐ Fumbling ☐ Slow ☐ Sure ☐ (Other) _____ (Balance during coin test) _____

Ability to understand instructions: ☐ Poor ☐ Fair ☐ Good

Tests performed: Date _____ Time _____ am/pm

OBSERVER'S OPINION:

Effects of alcohol: ☐ extreme ☐ obvious ☐ slight ☐ none

Ability to drive: ☐ unfit ☐ fit

Indicate briefly what first led you to suspect alcoholic influence: _____

Observed by: _____ Assignment? _____

Witnessed by: _____ Date _____ Time _____ am/pm

CHEMICAL TEST DATA:

Specimen: ☐ Blood ☐ Breath ☐ Saliva ☐ Urine ☐ None ☐ Refused ☐ Unable

Analysis result:

If Breath, what instrument?

If refused, why? _____

INTERVIEW:

Were you operating a vehicle?_____ Where were you going?_____

What street or highway were you on?_____ Direction of travel?_____

Where did you start from?_____ What time did you start?_____

What time is it now?_____ What city (county) are you in now?_____

What is the date?_____ What day of the week is it?_____

INTERVIEWER TO FILL IN ACTUAL: _____ am/pm _____ _____ _____

Time | Day | Date | Interviewer's Name

When did you last eat?_____ What did you eat?_____

What were you doing during the last three hours?_____

Have you been drinking?_____ What?_____ How much?_____

Where?_____ Started?_____ am/pm Stopped?_____ am/pm

Are you under the influence of an alcoholic beverage now?_____

What is your occupation?_____ When did you last work?_____

Do you have any physical defects?_____ If so, what?_____

Are you ill?_____ If so, what's wrong?_____

Do you limp?_____ Have you been injured lately?_____ If so, what's wrong?_____

Did you get a bump on the head?_____ Were you involved in an accident today?_____

Have you had any alcoholic beverage since the accident?_____ If so, what?_____

Where?_____ How much?_____ When?_____

Have you seen a doctor or dentist lately?_____ If so, who?_____ When?_____

What for?_____ Are you taking tranquilizers, pills or medicines of any kind?_____

If so, what kind? (Get sample)_____ Last dose?_____ am/pm Do you have epilepsy?_____

Diabetes?_____ Do you take insulin?_____ If so, last dose?_____ am/pm

Have you had any injections of any other drugs recently?_____ If so, what for?_____

What kind of drug?_____ Last dose?_____ am/pm When did you last sleep?_____

How much sleep did you have?_____ Are you wearing false teeth?_____ Do you have a glass eye?_____

HANDWRITING SPECIMEN
Signature and/or anything he chooses

REMARKS:_____

SUPPLEMENTARY DATA:

(Note—Get witnesses, including officers who observed, to prove driving)

WITNESSES			Was Suspect Driving or Operating	What Was His Condition	Where Observed
Name	Address	Tel. No			

Passengers in Suspect's Vehicle	Name	Address	Condition

National Safety Council, 425 North Michigan Ave., Chicago, Ill. 60611
Printed in U.S.A.

Stock No. 321.99

APPENDIX G

Minimum Educational and Experience Requirements - Laboratory Director and Laboratory Analyst for Chemical Testing of Blood and/or Urine*

I. Laboratory Director

A. He is a physician certified in anatomical and/or clinical pathology by the American Board of Pathology or the American Osteopathic Board of Pathology or possesses qualifications which are equivalent to those required for such certification (board eligible).

B. He is a physician who 1) is certified by the American Board of Pathology or the American Osteopathic Board of Pathology in at least one of the laboratory specialities, or 2) is certified by the American Board of Microbiology, the American Board of Clinical Chemistry, or other national accrediting board in one of the laboratory specialities, or 3) subsequent to graduation has had 4 or more years of general laboratory training and experience of which at least two were spent acquiring proficiency in one of the laboratory specialties in a clinical laboratory - with a director at the doctoral level - of a hospital, a health department, university, or medical research institution, or, in a State which regulates clinical laboratory personnel, in a clinical laboratory acceptable to that State.

C. He holds an earned doctoral degree from an accredited institution with a chemical, physical, or biological science as his major subject ("accredited," as used herein, refers to accreditation by a nationally recognized accrediting agency or association, as determined by the U. S. Commissioner of Education) and 1) is certified by the American Board of

*Conditions for Coverage of Services of Independent Laboratories Under the Federal Health Insurance for the Aged Act. (Paragraphs 402. 1312, 405. 1313, 405. 1315) (1966). U. S. Department of Health, Education, and Welfare, Social Security Administration, Washington, D. C.

Microbiology, the American Board of Clinical Chemistry, or other national accrediting board in one of the laboratory specialties, or 2) subsequent to graduation, has had 4 or more years of general clinical laboratory training and experience, of which at least 2 years were spent acquiring proficiency in one of the laboratory specialties in a clinical laboratory - with a director at the doctoral level - of a hospital, a health department, university, or medical research institution, or in a State which regulates clinical laboratory personnel, in a clinical laboratory acceptable to that State.

D. For a period ending June 30, 1971, an exception to the requirements in subparagraphs A, B or C above may be made if the conditions described in 1 and 2 below are met:

1. The director was responsible for the direction of a clinical laboratory for 12 months within the 5 years preceding July 1, 1966, and, in addition, meets one of the following requirements:

   a. The director holds a master's degree from an accredited institution with a chemical, physical, or biological science as his major subject and subsequent to graduation has had at least 4 years of pertinent clinical laboratory experience.

   b. The director holds a bachelor's degree from an accredited institution with a chemical, physical, or biological science as his major subject and subsequent to graduation has had at least 6 years of pertinent clinical laboratory experience.

   c. The director has achieved a satisfactory grade through an examination conducted by or under the sponsorship of the U.S. Public Health Service. Such examination shall be offered annually or more often if in the Secretary's opinion the need arises, except that such examination shall no longer be conducted subsequent to July 1, 1970 (see 405. 1314(b)). For a period ending July 31, 1967, the State agency will give interim certification of compliance with respect to a clinical laboratory if such laboratory otherwise meets the requirements and if the director has indicated his intention, in writing, to take the examination. All

such interim certifications and the determinations based on them shall terminate no later than July 31, 1967; and

2. The State agency has evidence of successful participation of the laboratory which he directs in State-operated or State-approved proficiency testing programs meeting standards prescribed by the Secretary and covering all the specialties or subspecialties in which the laboratory performs tests for individuals enrolled under the supplementary medical insurance plan; except that for a period ending July 31, 1968, in a State where proficiency testing programs covering some or all specialties are not yet available, the State agency will give interim certification of compliance with respect to a clinical laboratory which otherwise meets the requirements, if the laboratory successfully participates in the proficiency testing programs (if any) which the State has in operation or has approved in specialties (including the subspecialty of serology) in which the laboratory performs tests, all such interim certifications terminating no later than July 31, 1968. With respect to any period after July 31, 1968, where the Secretary determines that a State does not have, or that it appears that a State will not have, acceptable proficiency testing programs available, the Secretary will approve a testing program or programs for purposes of this paragraph, and the laboratory in such State successfully participates in the proficiency testing program(s) approved by the Secretary in specialties (including the subspecialty of serology) in which the laboratory performs tests.

E. The director who qualified under subparagraph "D" of this paragraph may continue to qualify under the program after June 30, 1971, if: 1) the laboratory which he directs is otherwise qualified; 2) the laboratory which he directs successfully participates in a performance evaluation program conducted by the State, meeting standards prescribed by the Secretary; and 3) as part of the participation in the performance evaluation program, the laboratory which he directs successfully participates for at least 2 consecutive years in the 3-year period between July 1, 1968, and July 1, 1971, and annually thereafter, in a State-operated or State-approved proficiency testing program meeting standards prescribed by the Secretary, or a program approved by the Secretary as prescribed in subparagraph "D" of this paragraph in all the specialties or

subspecialties in which the laboratory performs tests for individuals enrolled under the supplementary medical insurance plan, except that if the director first qualifies under subparagraph "D" of this paragraph after July 1, 1968, but before July 1, 1971, the 3-year period for purpose of this subparagraph "E" shall begin on the date he first qualified and, if otherwise acceptable, the laboratory he directs shall be deemed qualified subject to satisfactory participation in the performance evaluation program in subdivision 2) and this subdivision 3) of this subparagraph within the 3-year period beginning with the date the director so qualified.

II. Laboratory Analyst

A. Successful completion of a full course of study which meets all academic requirements for a bachelor's degree in medical technology from an accredited college or university.

B. Successful completion of 3 academic years of study (a minimum of 90 semester hours or equivalent) in an accredited college or university which met the specific requirements for entrance into, and the successful completion of a course of training of at least 12 months in, a school of medical technology approved by the Council on Medical Education and Hospitals of the American Medical Association.

C. Successful completion in an accredited college or university of a course of study which meets all academic requirements for a bachelor's degree in one of the chemical, physical, or biological sciences, and, in addition, at least 1 year of pertinent laboratory experience and/or training covering the specialty(ies) or subspecialty(ies) in which he performs tests, provided the combination has given the individual the equivalent in such specialty(ies) or subspecialty(ies) of the education and training described above.

D. Successful completion of 3 years (90 semester hours or equivalent) in an accredited college or university with a distribution of courses as shown below, and, in addition, successful experience and/or training covering several fields of medical laboratory work of such length (not less than 1 year), and of such quality that this experience or training, when combined with the education, will have provided the individual with education and training in medical technology equivalent

to that described above. Distribution of course work: (Where semester hours are stated, it is understood that the equivalent in quarter hours is equally acceptable. The Specified courses must have included lecture and laboratory work. Survey courses are not acceptable.)

1. For those whose training was completed prior to September 15, 1963: at least 24 semester hours in chemistry and biology courses of which not less than 9 semester hours must have been in chemistry, and not less than 12 semester hours must have been in biology courses pertinent to the medical sciences.

2. For those whose training was completed after September 15, 1963: 16 semester hours in chemistry courses which included at least 6 semester hours in inorganic chemistry courses and are acceptable toward a major in chemistry; 16 semester hours in biology courses which are pertinent to the medical sciences and are acceptable toward a major in the biological sciences; and 3 semester hours of mathematics.

E. For a period ending June 30, 1971, an exception to the requirements in subparagraphs A, B, C, or D above may be made if 1) the technologist was performing the duties of a clinical laboratory technologist on, or within the 5 years preceding July 1, 1966, and 2) the technologist has had at least 10 years of pertinent clinical laboratory experience prior to July 1, 1966: provided, that a minimum of 30 semester hours of credit toward a bachelor's degree from an accredited institution with a chemical, physical, or a biological science as his major subject or 30 semester hours in an approved school of medical technology shall reduce the required years of experience by 2 years, with any additional hours further reducing the required years of experience at the rate of 15 hours for 1 year.

F. The technologist who meets the requirements under subparagraph "E" of this paragraph may continue to qualify under the program after June 30, 1971, if he has performed the duties of a clinical laboratory technologist for at least 2 years between July 1, 1966, and July 1, 1971, or during the 10-year qualifying period in subparagraph "E" 1) in a clinical laboratory - with a director at the doctoral level - of a hospital, university, health department, or medical research institution; or 2) in a State

which regulates clinical laboratory personnel, in a clinical laboratory acceptable to that State; or 3) in a laboratory approved under the supplementary medical insurance program: provided also, that where qualifying years in a laboratory described in 1) and 2) of this paragraph are obtained after June 20, 1966, the laboratory meets applicable conditions under the health insurance program.

APPENDIX H

STANDARD REPORT OF ALCOHOL INVOLVEMENT IN FATAL MOTOR VEHICLE TRAFFIC ACCIDENTS

This form is intended to record the extent of alcohol involvement in FATAL Motor Vehicle Accidents. It is restricted to drivers and pedestrians, 15 years or older, who die within 4 hours of an accident. This includes ALL reported traffic fatalities, not only those tested for alcohol. Thus, it is to include results of post-mortem examinations and the results of ante-mortem studies in hospitals and clinics. However, no case in which post-accident survival was 4 hours or more is to be included. This form should not be completed on the basis of the final legal disposition of the cases, but, rather, on the basis of the considered judgment of the person completing it.

OFFICE OF RECORD _____ STATE _____
(Coroner, Health Dept., etc.)

REPORT PREPARED BY _____ DATE _____

REPORT COVERS CASES DATING FROM _____ TO _____

TYPE OF FATALITY			TOTAL DEATHS WITHIN 4 HOURS	NUMBER TESTED FOR ALCOHOL	NO. OF CASES IN EACH RANGE OF ALCOHOL CONCENTRATION					
					NEGATIVE	0.01 - 0.04%	0.05 - 0.09%	0.10 - 0.14%	0.15 - 0.24%	OVER 0.25%
PEDESTRIANS	AGED	15-64								
		65 --								
		TOTAL								
DRIVERS	CATEGORIES (*)	A								
		B								
		C								
		D								
		E								
		F								
		G								
		TOTAL								

(*) A. Only one vehicle involved – its driver fatally injured.
B. More than one vehicle involved, but only one in motion – its driver fatally injured.
C. More than one vehicle involved, but only one in motion – driver of nonmoving vehicle fatally injured.
D. More than one vehicle involved and in motion – driver in responsible vehicle fatally injured.
E. More than one vehicle involved and in motion – driver in nonresponsible vehicle fatally injured.
F. More than one vehicle involved and in motion – responsibility of fatally injured driver unknown or not clear.
G. More than one vehicle involved and in motion – two or more drivers fatally injured.

With respect to Categories D,E,F, and G above, the following explanations are offered:

- D should be chosen where there would be no reasonable doubt as to which driver or vehicle was responsible for an accident due to the dynamics of the crashes involved. An example might be a driver who crosses a median strip and hits an innocent driver, killing himself.
- E should be chosen if, in the example given above, the innocent driver is killed rather than the crossing driver.
- F should be chosen where there is no clear evidence which driver was at fault.
- Each driver killed in the G Category should be listed in the appropriate column of the form.

APPENDIX I

PERTINENT SECTIONS OF UNIFORM VEHICLE CODE* REFERRING TO CHEMICAL TESTING AND IMPLIED CONSENT

Sec. 1-155 - Revocation of driver's license. - The termination by formal action of the department of a person's driver's license or privilege to operate a motor vehicle on the public highways, which termination shall not be subject to renewal or restoration except that an application for a new license may be presented and acted upon by the department after the expiration of periods of time prescribed in this act. (REVISED, 1962.)

Sec. 6-205.1 - Revocation of license in event of refusal to submit to chemical tests.

A. Any person who operates a motor vehicle upon the public highways of this State shall be deemed to have given consent, subject to the provisions of section 11-902, to a chemical test or tests of his blood, breath, or urine for the purpose of determining the alcoholic content of his blood if arrested for any offense arising out of acts alleged to have been committed while the person was driving or in actual physical control of a motor vehicle while under the influence of intoxicating liquor. The test or tests shall be administered at the direction of a law enforcement officer having reasonable grounds to believe the person to have been driving or in actual physical control of a motor vehicle upon the public highways of this State while under the influence of intoxicating liquor. The law enforcement agency by which such officer is employed shall designate which of the aforesaid tests shall be administered.

B. Any person who is dead, unconscious, or who is otherwise in a condition rendering him incapable of refusal, shall be deemed not to have withdrawn the consent provided by

*National Committee on Uniform Traffic Laws and Ordinances, Uniform Vehicle Code, Chapters 1, 6, 11, NCUTLO, Suite 430, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036.

paragraph A of this section and the test or tests may be administered, subject to the provisions of section 11-902.

C. If a person under arrest refuses upon the request of a law enforcement officer to submit to a chemical test designated by the law enforcement agency as provided in paragraph A of this section, none shall be given, but the department, upon the receipt of a sworn report of the law enforcement officer that he had reasonable grounds to believe the arrested person had been driving or was in actual physical control of a motor vehicle upon the public highways of this State while under the influence of intoxicating liquor and that the person had refused to submit to the test upon the request of the law enforcement officer, shall revoke his license or permit to drive or any nonresident operating privilege; or if the person is a resident without a license or permit to operate a motor vehicle in this State, the department shall deny to the person the issuance of a license or permit for a period of six months after the date of the alleged violation, subject to review as hereinafter provided.

D. Upon revoking the license or permit to drive or nonresident operating privilege of any person, or upon determining that the issuance of a license or permit shall be denied to the person, as hereinbefore in this section directed, the department shall immediately notify the person in writing and upon his request shall afford him an opportunity for a hearing in the same manner and under the same conditions as is provided in section 6-206(b) for notification and hearings in the cases of discretionary suspension of licenses, except that the scope of such a hearing for the purposes of this section shall cover the issues of whether a law enforcement officer had reasonable grounds to believe the person had been driving or was in actual physical control of a motor vehicle upon the public highways of this State while under the influence of intoxicating liquor, whether the person was placed under arrest, and whether he refused to submit to the test upon request of the officer. Whether the person was informed that his privilege to drive would be revoked or denied if he refused to submit to the test shall not be an issue. The department shall order that the revocation or determination that there should be a denial of issuance either be rescinded or sustained.

E. If the revocation or determination that there should be a denial of issuance is sustained after such a hearing, the person whose

license or permit to drive or nonresident operating privilege has been revoked, or to whom a license or permit is denied, under the provisions of this section, shall have the right to file a petition in the appropriate court to review the final order of revocation or denial by the department in the same manner and under the same conditions as is provided in section 6-211 in the cases of discretionary revocation and denials.

F. When it has been finally determined under the procedures of the section that a nonresident's privilege to operate a motor vehicle in this State has been revoked, the department shall give information in writing of the action taken to the motor vehicle administrator of the State of the person's residence and of any State in which he has a license (NEW SECTION, 1962).

Sec. 6-208 - Period of suspension or revocation

A. The department shall not suspend a driver's license or privilege to drive a motor vehicle on the public highways for a period of more than 1 year except as permitted under section 6-303.

B. Any person whose license or privilege to drive a motor vehicle on the public highways has been revoked shall not be entitled to have such license or privilege renewed or restored unless the revocation was for a cause which has been removed, except that after the expiration of six months in cases of revocation for refusal to submit to a chemical test under the provisions of section 6-205.1, and in all other revocation cases after the expiration of 1 year, from the date on which the revoked license was surrendered to and received by the department, such persons may make application for a new license as provided by law, but the department shall not then issue a new license unless and until it is satisfied after investigation of the character, habits, and driving ability of such person that it will be safe to grant the privilege of driving a motor vehicle on the public highways. (REVISED, 1962.)

Sec. 6-211 - Right of appeal to court

Any person denied a license or whose license has been canceled, suspended, or revoked by the department except where such cancellation or revocation is mandatory under the provisions of this act shall have

the right to file a petition within 30 days thereafter for a hearing in the matter in a court of record in the county wherein such person shall reside, or in the case of cancellation, suspension, or revocation of a nonresident's operating privilege, in the county in which the main office of the department is located, and such court is hereby vested with jurisdiction and it shall be its duty to set the matter for hearing upon 30 days' written notice to the commissioner, and thereupon to take testimony and examine into the facts of the case and to determine whether the petitioner is entitled to a license or is subject to suspension, cancellation, or revocation of license under the provisions of this chapter. (REVISED, 1952.)

Sec. 11-902 - Persons under the influence of intoxicating liquor

A. It is unlawful and punishable as provided in section 11-902.2 for any persons who are under the influence of intoxicating liquor to drive or be in actual physical control of any vehicle within this State.

B. Upon the trial of any civil or criminal action or proceeding arising out of acts alleged to have been committed by any person while driving or in actual physical control of a vehicle while under the influence of intoxicating liquor, the amount of alcohol in the person's blood at the time alleged as shown by chemical analysis of the person's blood, urine, breath, or other bodily substance shall give rise to the following presumptions:

1. If there was at that time 0.05 percent or less by weight of alcohol in the person's blood, it shall be presumed that the person was not under the influence of intoxicating liquor.

2. If there was at that time in excess of 0.05 percent but less than 0.10 percent by weight of alcohol in the person's blood, such fact shall not give rise to any presumption that the person was or was not under the influence of intoxicating liquor, but such fact may be considered with other competent evidence in determining whether the person was under the influence of intoxicating liquor.

3. If there was at that time 0.10 percent or more by weight of alcohol in the person's blood, it shall be presumed that the person was under the influence of intoxicating liquor.

4. Percent by weight of alcohol in the blood shall be based upon grams of alcohol per one hundred cubic centimeters of blood.

5. The foregoing provisions of paragraph B shall not be construed as limiting the introduction of any other competent evidence bearing upon the question whether the person was under the influence of intoxicating liquor.

C. Chemical analyses of the person's blood, urine, breath, or other bodily substance to be considered valid under the provisions of this section shall have been performed according to methods approved by the State Department of Health and by an individual possessing a valid permit issued by the State Department of Health for this purpose. The State Department of Health is authorized to approve satisfactory techniques or methods, to ascertain the qualifications and competence of individuals to conduct such analyses, and to issue permits which shall be subject to termination or revocation at the discretion of the State Department of Health.

D. When a person shall submit to a blood test at the request of a law enforcement officer under the provisions of section 6-205.1, only a physician or a registered nurse (or other qualified person) may withdraw blood for the purpose of determining the alcoholic content therein. This limitation shall not apply to the taking of breath or urine specimens.

E. The person tested may have a physician, or a qualified technician, chemist, registered nurse, or other qualified person of his own choosing administer a chemical test or tests in addition to any administered at the direction of a law enforcement officer. The failure or inability to obtain an additional test by a person shall not preclude the admission of evidence relating to the test or tests taken at the direction of a law enforcement officer.

F. Upon the request of the person who shall submit to a chemical test or tests at the request of a law enforcement officer, full information concerning the test or tests shall be made available to him or his attorney.

OPTIONAL G If a person under arrest refuses to submit to a chemical test under the provisions of section 6-205.1, evidence of refusal shall be admissible in any civil or criminal

action or proceeding arising out of acts alleged to have been committed while the person was driving or in actual physical control of a motor vehicle upon the public highways of this State while under the influence of intoxicating liquor. (SECTION REVISED AND AMPLIFIED, 1962.)

APPENDIX J

SUMMARY OF 1968 ALCOHOL AND HIGHWAY SAFETY REPORT*

The following is a summary of the report, the full text of which should be consulted by all those concerned with this field:

SUMMARY

The use of alcohol by drivers and pedestrians leads to some 25,000 deaths and a total of at least 800,000 crashes in the United States each year. Especially tragic is the fact that much of the loss in life, limb, and property damage involves completely innocent parties.

The problem was first identified in 1904, and was first shown to be serious in 1924. Since then, every competent investigation has demonstrated that the immoderate use of alcohol is a very major source of highway crashes, especially of those most violent. In fact, it contributes to about half of all highway deaths and to appreciable percentages of the far more numerous non-fatal crashes.

The Role of the Heavy Drinker

Research shows that more than half of adults use the highways at least occasionally after drinking. However, the scientific evidence is irrefutable that the problem is primarily one of persons, predominately men, who have been drinking heavily, to an extent rare among drivers and pedestrians not involved in crashes.

Alcoholics and other problem drinkers, who constitute but a small minority of the general population, account for a very large part of the overall problem. Their involvement in highway crashes and violations after drinking heavily is one of the many tragic derivatives of their deviancy and pathological behavior in society as a whole and, to be dealt with properly, must be approached in the larger context. There are at present virtually no programs in the country in which alcoholism specialists

*See Appendix C for full citation.

of people coming to attention because of alcohol-related highway problems to determine the types of drinkers involved and to reduce repetition in the future.

Drinking Teenagers and Social Drinkers

Fatal and other crashes of teenagers and young adults also frequently involve hazardous amounts of alcohol. Adults who use alcohol immoderately, but not identified as problem drinkers by the research to date, are also frequently involved. On the basis of considerable scientific evidence, light drinking, although shown to have adverse effects, is clearly not the source of most of the problem, but its exact role is at present unknown because of insufficient research.

Parallels to Alcohol in Relation to Other Forms of Violence

Overall, the relationship between alcohol and highway crashes and violations parallels in many ways the long known, and very frequent, relationship between alcohol abuse and other forms of violence.

Time of Day and Day of Week

Crashes involving alcohol occur at all times of day. During the morning rush hours, however, they are relatively uncommon — a principal reason for the low fatality rates at this time of day. In sharp contrast, the overwhelming majority of alcohol-involved crashes occur during the late afternoon, evening, and nighttime hours. So greatly does the abusive use of alcohol contribute to crashes at these times of day that the odds are very high that it was involved in any serious crash. In illustration, in one study the odds were found to be more than eight to one that the driver fatally injured in a single vehicle crash between nine p. m. and midnight had been drinking heavily.

While there is an excess of alcohol-related crashes on Saturdays, they are very common on all days of the week. This is believed to reflect both the fact that heavy drinkers do not confine their use of alcohol to weekends and that social drinking increases on weekends.

Preventive and other police activities directed at this problem must be concentrated in the hours when it is most serious. The same applies to the staffing and state of readiness of hospital and related emergency services that work to salvage the injured and dying, whether or not they have contributed to the damage they have suffered. In fact, many hospitals, police, and emergency services are least prepared for such activity at night and on weekends, the times of greatest need.

Countermeasures and Their Efficacy

Present enforcement, legal, and administrative approaches contribute considerably to the detection and handling of individual cases. The extent to which they have reduced the magnitude of the problem or the contribution of each of the several relatively distinct types of drinkers involved is as yet unknown. That better approaches are needed to augment those now in use is indicated not only by the continued, tragic magnitude of the problem, but also by recent findings that appreciable percentages of those whose licenses have been suspended or revoked for alcohol-related offenses continue to drive. Attention must especially be directed at the development of constitutionally acceptable methods for screening highway users suspected of drinking, as well as those whose violations and crashes are not known to involve alcohol, to determine if they have been drinking to hazardous extents. Such screening is practiced in the United Kingdom under recently enacted legislation. In the United States, however, the so-called "implied consent" statutes under which many breath and blood tests are used apply only in situations in which drivers have already been arrested for driving while intoxicated or for similar offenses.

Implications for Other Means of Reducing Injury and Death

The historic intractability of the problem of alcohol in relation to highway safety and the likelihood that it will be difficult to reduce the continuing predominant role of heavy drinkers in the near future make particularly important countermeasures that attack other portions of the sequences that lead to the end results of property damage, injury, and death. Thus, improvements in vehicle and highway crash design of types already greatly reducing death and injury in crashes of whatever primary cause, and whether involving "innocent" or other individuals, must be emphasized. Emergency services must also be made far more effective. This is not to suggest a less than allout attack on the abusive consumption of alcohol in connection with highway use. Rather, it recognizes that all practical means for reducing the nation's staggering highway losses, now averaging 10,000 casualties each day from all causes, must be employed to the fullest extent possible.

The Dearth of Research

It is only during recent years that the complexities of the overall problem have begun to be identified by the few research workers concerned with the field. Less than a score of qualified research scientists are now known to be at work on this serious problem either in the United States

or elsewhere in the world. This is in sharp contrast to the thousands of research workers studying traditional social and medical problems. Yet this major source of human morbidity and mortality will continue to plague our mechanically powered society until its ramifactions and many present questions have been exhaustively explored and the precise possibilities for truely effective countermeasures determined. To provide the needed scientific information, a number of the most important questions are being investigated by research groups working on contract for the Department of Transportation.